

## CLAIMS

What is claimed is:

1. A method of routing a data flow traversing one or more routers in an internetwork, wherein the one or more routers are coupled to a plurality of service provider access links, the method comprising:
  - determining a prefix for the data flow;
  - calculating a plurality of performance scores for the plurality of service provider access links, each of the plurality of performance scores indicating performance of a route from a router of the one or more routers to the prefix via a distinct service provider access link from the plurality of service provider access links;
  - detecting a current service provider access link for the prefix, the current service provider access link corresponding to a current route to the prefix specified by a routing protocol, the current service provider access link having a performance score from the plurality of service provider access links; and
  - selecting a new service provider access link from the plurality of service provider access links for routing the data flow to the prefix, wherein the new server provider access link has a performance score from the plurality of performance scores superior to the performance score for the current service provider access link.
2. The method of claim 1, wherein the plurality of performance scores is at least partially dependent upon delay measurements across the plurality of service provider access links.
3. The method of claim 1, wherein the plurality of performance scores is at least partially dependent upon jitter measurements across the plurality of service provider access links.
4. The method of claim 1, wherein the plurality of performance scores is at least partially dependent upon loss measurements across the plurality of service provider access links.

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1           5.       The method of claim 1, wherein each of the plurality of performance scores  
2 comprises a scalar value.

1           6.       The method of claim 5, wherein the plurality of performance scores is  
2 customized for HTTP traffic.

1           7.       The method of claim 5, wherein the plurality of performance scores is  
2 customized for video traffic.

1           8.       The method of claim 5, wherein the plurality of performance scores is  
2 customized for VoIP traffic.

1           9.       The method of claim 1, wherein the plurality of performance scores is at  
2 least partially dependent upon interface load measurements.

1           10.      The method of claim 1, wherein the plurality of performance scores is at  
2 least partially dependent upon user configurable weights.

1           11.      A networking device for improving performance of one or more edge  
2 routers in communication with the networking device, the networking device comprising:  
3 a prefix database including a plurality of network prefixes;  
4 a priority queue, the priority queue including a plurality of entries for a subset of  
5 the plurality of network prefixes, such that the subset of the plurality of  
6 network prefixes is arranged in the priority queue in order of relative  
7 improvement in routing performance;  
8 an asynchronous thread executing on the networking device, wherein the  
9 asynchronous thread retrieves the subset of the plurality of network prefixes  
10 from the prefix database and inserts the subset of the plurality of network  
11 prefixes in the priority queue in the order of relative improvement in routing  
12 performance; and  
13 a synchronous thread executing on the networking device concurrently with the  
14 asynchronous thread, wherein the synchronous thread retrieves the subset of  
15 the plurality of network prefixes from the priority queue in the order of relative  
16 improvement in routing performance.

1           12.     The networking device of claim 11, wherein the subset of the plurality of  
2     network prefixes is retrieved by the synchronous thread from the priority queue at a  
3     fixed rate.

1           13.     The networking device of claim 12, wherein the fixed rate is user specified.

1           14.     A routing intelligence device for controlling a plurality of routers, wherein  
2     each of the plurality of routers is coupled to a plurality of service provider access links  
3     (SPALs), such that each of the plurality of routers is coupled to a distinct subset of the  
4     plurality of service provider access links, the routing intelligence device comprising:  
5         an internal database, the internal database including a plurality of records  
6     including:

7                 a key field storing one or more network prefixes;  
8                 a service provider access link field storing one or more identifiers for one  
9     or more current service provider access links from the plurality of service provider access  
10    links for linking the plurality of routers to the one or more network prefixes;  
11                 an update flag indicating whether the service provider access link field was  
12    recently updated; and  
13                 one or more performance scores for the one or more current service  
14    provider access links.

1           15.     The routing intelligence device of claim 14, further comprising:  
2         a plurality of blades, such that each of the plurality of service provider access links  
3     associates with one or more blades of the plurality of blades for measuring a performance  
4     of the service provider access link.

1           16.     The routing intelligence device of claim 15, further comprising:  
2         one or more processes for selecting a preferred service provider access link from  
3     the plurality of service provider access links, the one or more processes executed on a  
4     decision blade from the plurality of blades.

1           17.     The routing intelligence device of claim 15, further comprising:  
2         a communication backplane, the communication backplane coupling the plurality  
3     of blades.

